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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,601	01/04/2007	Gilles Gauthier	293415US0PCT	5972

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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MC GINTY, DOUGLAS J

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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06/04/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/586,601	<b>Applicant(s)</b> GAUTHIER ET AL.	
	<b>Examiner</b> DOUGLAS MC GINTY	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-33 is/are pending in the application.  
4a) Of the above claim(s) 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-12 and 14-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Status of Prosecution***

The rejection under 35 USC 112, second paragraph, is maintained for the previously rejected claims and the newly added claims.

The rejection under 35 USC 103(a) over Hsu (Journal of Materials Chemistry, 14, 2690-2695) is withdrawn.

The rejection under 35 USC 103(a) over Ravet (US 2002/0195591) is maintained for the previously rejected claims and the newly added claims.

The text of those sections of the statutes, rules, caselaw, and guidelines not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 112***

Claims 1-3, 5-12, and 14-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, second from last line, recites "in a short period of time". This limitation is indefinite because it is unclear how short is "short". At p. 12, lines 28-31, the specification indicates that a "short period of time...is intended to mean durations *generally* less than or equal to 1 hour" (italics added). The term "generally" is construed as meaning "usually" which does not preclude the possibility of periods longer than one hour.

Claim 14 depends from cancelled claim 13. Claim 14 apparently should depend from claim 1.

The claim(s) should be rewritten as appropriate to clearly set forth the claimed invention. No new matter should be added. Notwithstanding the above rejection(s), the claim(s) is (are) examined to the extent understood. MPEP 2173.06.

***Claim Rejections - 35 USC § 103***

Claims 1-3, 5-12, and 14-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravet (US 2002/0195591).

Ravet teaches a process for preparing a composite material comprising mixing  $\text{LiFePO}_4$  and an electronically conducting compound such as carbon [0069-0077]. The  $\text{LiFePO}_4$  and organic compound are mixed and dried, and the organic compound is thermally decomposed at  $700^\circ\text{C}$  for 3 hours in an inert atmosphere of Ar [0071]. The amount of carbon in the final product may be 0.1-55 wt% [0020, 0071, 0073, and 0077].

To the extent the language in claim 1 is understood, Ravet does not appear to teach thermal decomposition for "a short period of time".

Nevertheless, Ravet teaches thermal decomposition for 3 hours, as discussed above. Such a time period is deemed to be "short".

It would have been obvious for a process for preparing a composite material of  $\text{LiFePO}_4$  and carbon, as taught by Ravet, to have a step of thermal decomposition for a short period of time because Ravet teaches a sol-gel step with a thermal decomposition step of 3 hours. The length of time of 3 hours is considered to be a short time as well, to the extent the present claim language is understood.

With respect to claim 8, Ravet teaches drying under vacuum [0095]. Such treatment is considered to be the start of the thermal decomposition step. Moreover,

one of ordinary skill in the art would have been aware of the use of a vacuum as an obvious alternative to the use of an inert gas such as Ar in order to avoid exposure to oxygen. One of ordinary skill is not an automaton; he or she is capable of using common sense. *KSR Intern. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742 (2007).

With respect to claim 14, the time period of 3 hours comprises the time period of 1 hour as well. Some thermal decomposition also would have occurred during the first hour. In any case, the time period of 3 hours is close enough to the time period of 1 hour that one skilled in the art would have expected the same result. MPEP 2144.05, I.

. With respect to claim 18, Ravet teaches trituration [0100].

With respect to claims 21, 24, and 26, Ravet teaches a sol-gel technique [0096].

With respect to claims 22, 23, and 25, Ravet teaches a variety of organic compounds [0024, 0052].

With respect to claims 27 and 28, Ravet teaches the formation of a powder [0071, 0073, and 0077]. The claimed particle sizes and surface areas would have been prima facie obvious in view of the process taught by Ravet. MPEP 2112.02.

With respect to newly added claims 31-33, Ravet teaches a variety of organic compounds [0024, 0052] which also could form complexes.

### ***Response to Arguments***

The applicants' Remarks/Arguments filed March 18, 2009 have been carefully considered. Those arguments are persuasive for the withdrawn rejection under 35 USC 103(a) over Hsu. However, the arguments are not persuasive for the maintained

Art Unit: 1796

rejection under 35 USC 112, second paragraph, as indefinite, and the maintained rejection under 35 USC 103(a) as obvious over Ravet.

The applicants urge that the “short period of time” limitation is definite. This examiner previously recommended that the limitations of claim 13 be incorporated into claim 1, but the applicants responded by cancelling claim 13 without incorporation of those limitations into claim 1.

The applicants note that the “short period of time” limitation is defined in the present specification as meaning “generally less than or equal to 1 hour”. The applicants add that the “short period of time” is linked to the step of thermal decomposition, so that the period of time for such decomposition may be 1 hour plus one minute, five minutes, etc. The applicants further assert that “the metes and bounds of the claimed invention would be clear to one of ordinary skill in the art, particularly given the definition of [the short period of time] phrase contained in the present specification.”

The applicants’ argument still begs the question: How short is “short”? Others skilled in the art need to know the “metes and bounds” of the claimed invention so they can determine whether or not they are infringing it. Stating that the time period is “generally” 1 hour or less does not provide that needed information, even if linked to thermal decomposition. The qualifier “generally” allows for exceptions which are considerably longer than 1 hour. One day (24 hours) also can be considered to be a “short period of time”. Artisans would be faced with the predicament of trying to predict

Art Unit: 1796

whether their processes fall within the general definition of 1 hour or less or whether they fall within an exception that can be longer.

The prosecution history also is not clear whether 2 or 3 hours is still a “short period of time”. For instance, the applicants never distinguished the time period of 2 hours in Hsu.<sup>1</sup> The applicants also do not appear to distinguish the time period of 3 hours in Ravet, but instead, they assert that Ravet involves a “two-step” process which includes an earlier time-consuming step.

Accordingly, the rejection under 35 USC 112, second paragraph, is maintained. This rejection still may be overcome by incorporating the limitations of cancelled claim 13 into present claim 1.

The applicants argue that Ravet does not teach or suggest their “single step” process but instead teaches a “two-step” method. The first step in Ravet, they assert, involves a time-consuming step of synthesizing the  $\text{LiFePO}_4$ , followed by the second step of thermally decomposing the “outer carbonaceous portion” of the composite around the  $\text{LiFePO}_4$ . The second step may be 3 hours, but the first step is said to be much longer.

This argument is not supported by the language of claim 1. During prosecution the claims must be given their broadest reasonable interpretation. MPEP 2111. It is improper to import claim limitations from the specification. MPEP 2111.01, II.

In this case, the claimed method is not limited to a “single step” process but can include a “two-step” process as well. Present claim 1, last 4 lines, has the proviso:

in which a homogenous mixed precursor containing all the elements A, D, M, Z, O, N and F forming the electrode active compound and also one or more organic and/or organometallic compounds are thermally decomposed, in a short period of time, so as to obtain the composite material.

The “homogenous mixed precursor” includes the listed elements forming the electrode active compound. Regardless of whether the  $\text{LiFePO}_4$  was synthesized in a previous “step”, it still meets the limitation of having all the elements of the “electrode active compound”. The  $\text{LiFePO}_4$  also may be considered to be a “precursor” because it must be processed further to make the final product.

The teachings of Ravet read on the claimed process. In Example 3 of Ravet, the  $\text{LiFePO}_4$  powder is impregnated with aqueous sucrose and dried to obtain a homogenous distribution [0070]. The impregnated  $\text{LiFePO}_4$  powder would be the “precursor” and the aqueous sucrose would be the organic compound. The homogenous distribution is then thermally decomposed for three hours to obtain the composite material [0071].

Accordingly, the claims are still found to have been obvious in view of the teachings of Ravet. The reference teaches a thermal decomposition time of 3 hours which is not distinguished by the “short period of time” limitation in the present claims.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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<sup>1</sup> It is true that the applicants did not have to distinguish over Hsu because they perfected an earlier foreign priority.



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS MC GINTY whose telephone number is (571)272-1029. The examiner can normally be reached on M-F, 830-500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DOUGLAS MC GINTY/  
Primary Examiner, Art Unit 1796